

March 2018

Other Services and Programs

MOWING & SPRAYING:

County roadsides are mowed and sprayed each growing season in accordance with provisions of the Ohio Revised Code Section 5579.04. We meet the mowing requirements by using both county crews and contracted services while relying solely on contracted services for all spraying operations. In 2017, Quick Mow, Inc. was contracted through the bidding process to complete all three rounds of 424 miles of mowing at a cost of \$77.25/mile (\$98,262 total). Our county crews mowed 131.35 acres of petition drainage ditches, utilizing in-house equipment and resources.

PAVEMENT MARKING:

We contracted in 2017 with Oglesby Construction Inc. to complete center line marking on 56 road miles of county highway and 57 miles of township highway at a cost of \$29,493. Oglesby also edge lined 113 lane miles of county highway and 113 miles of township highway at a cost of \$55,370. The relatively mild winter we experienced in the 2016-2017 winter season helped to maintain the integrity of our pavement striping thus keeping the amount of miles to restripe very low.



Personnel

2017 HIRINGS AND RETIREMENTS:

NEW HIRES:

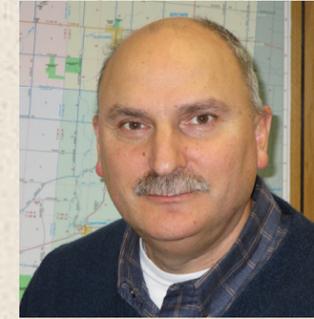
Tyler Baker and **Travis Brown** joined the Highway Garage as a Highway/Bridge Worker 1 on November 20. We would like to welcome Tyler and Travis and wish them much success in their employment with Miami County.

RETIREMENTS:

Rike Miller retired on February 28, 2017 after 27 years of service at the Highway Garage. Rike was hired on full time as a HMW1 on June 4, 1990 and was promoted to HBW2 on June 22, 2013.

Bill Blankenship retired on June 30, 2017 after 30 years of service at the Highway Garage. Bill was hired on June 29, 1987 as a HMW1 and was promoted to Sign Maintenance Supervisor on May 7, 2004.

Although we were sorry to lose two dedicated and hard-working employees and co-workers, we all wish both Rike and Bill the very best in a long and happy retirement.



Paul P. Huelskamp PE, PS
Miami County Engineer

Miami County Engineer's Office & Highway Garage

2100 N. County Rd. 25A
Troy, Ohio 45373

Office: (937) 440-5656
Garage: (937) 440-5658
Fax: (937) 440-5659

mceo@miamicountyohio.gov

<http://www.miamicountyohio.gov/engineer/index.htm>

Hours

7:30 am - 4:00 pm
Monday thru Friday

Summer Garage Hours

6:30 am - 3:00 pm

Miami County Tax Map Office

201 West Main Street
Troy, Ohio 45373

Office: (937) 440-6025
Fax: (937) 440-6026

Hours

7:30 am - 4:00 pm
Monday thru Friday



Miami County, Ohio
Population: 104,679
Elevation: 827 ft.

Honorable Board of Miami County Commissioners,

In compliance with Section 5543.02 of the Ohio Revised Code, it is my pleasure to provide you with this 2017-2018 annual report for your review. It provides you with details of our activities during the past year regarding the maintenance of county-owned roads, bridges and culverts; along with a description of completed projects, the report includes upcoming initiatives for 2018 and beyond, with associated cost estimates.

In 2017 we were once again able to be aggressive with our paving program and exceeded 2016's program total by 2.285 miles for a total 24.554 miles paved at a cost of \$1,642,670. The aforementioned miles included 19.694 miles or 11 roads that were last paved between 1992—1997 on our annual road program.

County Road 25A, last paved in 1991, was resurfaced from the City of Troy corporation limit to the City of Piqua corporation limit. The project was funded 75% by Federal funds (\$953,494.24) and 25% by local funds (\$234,397.54). The project included thermoplastic pavement markings, raised pavement markers, and berming.

While my staff and I are quite pleased by our ability to expand our paving program over recent years, we keep in mind that with a total certified road mileage of 423.531, a ten-year paving cycle would require us to pave approximately 42.353 miles of roadway per year. As such, I respectfully request that you consider the provisions outlined in Ohio Revised Code 4504.24 and my letter to the Board dated August 11, 2017. Enactment would generate an additional \$600,000 annually for roadway maintenance and construction.

Our major bridge project in 2017 was the Shiloh Road Bridge No. 3.51 replacement. The pre-stressed concrete beams were competitively bid and subsequently awarded to Prestress Services Industries of Ohio, LLC for an amount of \$161,000.00 and was funded by OPWC. The abutments were constructed by county crews. The total cost of the replacement project was \$288,383.00.

Please take a moment to look over the information included within the pages of this report to learn more about our accomplishments in 2017 and our goals for the coming years. If you have any questions regarding the duties or responsibilities of the County Engineer's Office, please contact me. As always, I appreciate the opportunity to serve you and the citizens of Miami County as your County Engineer.

Paul P. Huelskamp, PE, PS

Bridge Levy
Funds totaled
\$796,022 in 2017



2017 Paving Program - Milling on County Road 25A



Finances

Funds to support County Engineer operations come primarily from highway user fees like gasoline taxes and vehicle registration fees. In 2017, we received **\$5,804,234** in such fees. Additional funds are generated through the Miami County Bridge Levy, which voters have supported since 1951. Levy funds, which totaled **\$796,022** in 2017, are used to build, maintain and repair the large number of bridges and culverts in our county.

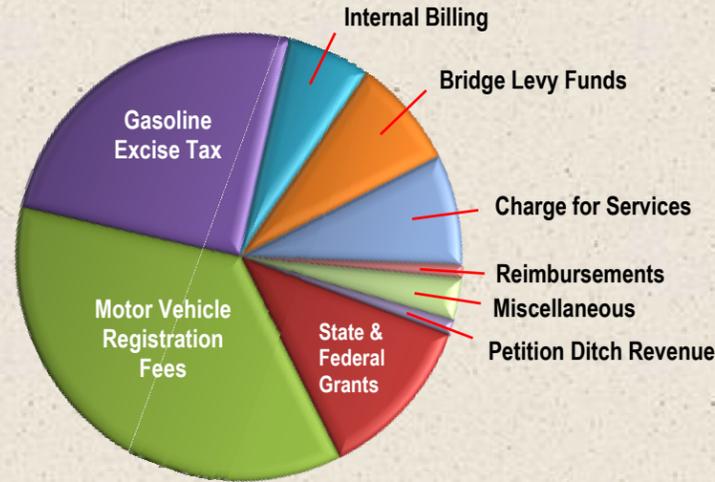
Whenever possible, we apply for Federal grant money and Ohio Public Works Commission funds to bring tax money back to Miami County for local projects. By using local match money to qualify for state and federal funds, we maximize the use of county dollars to complete many projects that would otherwise be unaffordable. In 2017, we secured **\$1,120,158** in state and federal grant funds.

A breakdown of our 2017 Revenues and Expenditures is shown below.

2017 REVENUE

		2017	2016
State & Federal Grants	12%	\$1,120,158	\$550,040
Motor Vehicle Registration Fees	36%	\$3,414,949	\$3,401,470
Gasoline Excise Tax	25%	\$2,389,285	\$2,338,616
Internal Billing	6%	\$597,726	\$477,812
Bridge Levy Funds	8%	\$796,022	\$787,026
Charge for Services	8%	\$713,660	\$268,607
Reimbursements	1%	\$69,699	\$54,749
Miscellaneous (Refunds, interest, etc.)	3%	\$263,610	\$499,100
Petition Ditch Revenue	1%	\$98,915	\$91,003
TOTAL	100%	\$9,464,024	\$8,468,423

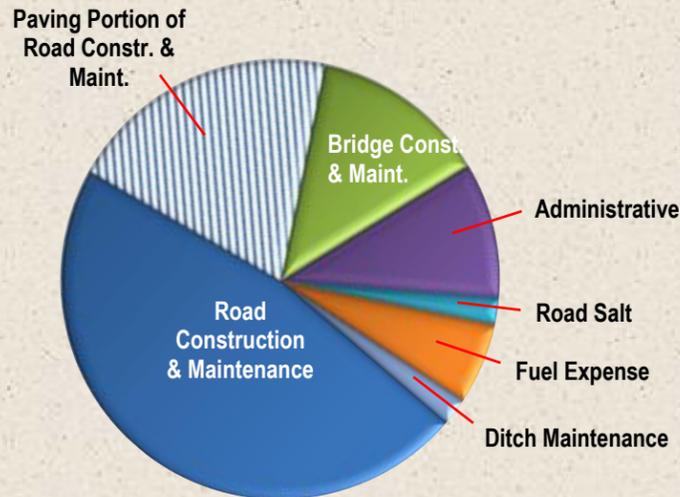
2016



2017 EXPENDITURES

		2017	2016
Road Construction & Maintenance	71%	\$6,464,893	\$5,332,513
Bridge Construction & Maintenance	13%	\$1,218,683	\$1,000,619
Administrative	9%	\$843,050	\$863,781
Road Salt	1%	\$136,562	\$160,968
Fuel Expense	5%	\$482,730	\$432,800
Ditch Maintenance	1%	\$139,107	\$51,776
TOTAL	100%	\$9,285,025	\$7,842,457

2016



2017 MAJOR EQUIPMENT PURCHASES

EQUIPMENT	DEPARTMENT	COST
One 2017 GMC Sierra 2500 Crew Cab Pickup Truck	Office	\$30,566
Two V-Plows	Highway	\$16,2858
Two 11' Snow Plows	Highway	\$20,864
Two 20-Ton Pintle Trailers	Highway	\$36,318
Two 2018 GMC Sierra 3500 Pickup Trucks	Highway	\$58,631
Two 2018 Western Star 4700 Dump Trucks with Stainless Steel Beds	Highway	\$257,506
One 2017 CAT 930M Wheel Loader	Highway	\$160,068
One 2017 CAT 330F Excavator	Highway	\$288,905



Future Major Projects

ROADS

TROY-SIDNEY BERM STABILIZATION AND OVERLAY

This project consists of overlaying and widening Troy-Sidney Road from Statler Road north to State Route 36.

Year: 2018 Total Cost: \$368,827 Local Share: \$103,272 (28%) Other Funding: \$265,555 - OPWC (72%)

ROSS ROAD RESURFACING PROJECT

This project consists of leveling and overlaying Ross Road from State Route 202 on the west and extending east to State Route 201.

Year: 2019 Total Cost: \$350,000 Local Share: \$98,000.00 (28%) Other Funding: \$252,000 - OPWC (72%) (If approved)

COUNTY ROAD 25A GUARDRAIL UPGRADE

This project consists of upgrading obsolete guardrail along County Road 25A between Troy and Piqua.

Year: 2020 Total Cost: \$300,000 Local Share: None Other Funding: \$300,000 - Federal HSTP (100%)

BELLEFONTAINE ROAD RESURFACING PROJECT

This project consists of overlaying Bellefontaine Road from the Montgomery County Line to the Clark County Line.

Year: 2020 Total Cost: \$156,000 Local Share: \$36,000 (20%) Other Funding: \$120,000 - MVRPC STP (80%) (If approved)

LOONEY ROAD RESURFACING PROJECT

This project consists of overlaying Looney Road from USR 36 to County Road 25A.

Year: 2020 Total Cost: \$924,970 Local Share: County-\$171,906 & City-\$257,859 (45%) Other Funding: \$495,205 - MVRPC STP (55%) (If approved)

COUNTY ROAD 25A RESURFACING PROJECT — NORTH

This project consists of overlaying County Road 25A from Indian Ridge Drive to Miami-Shelby Road East.

Year: 2021 Total Cost: \$483,600 Local Share: \$204,600 (40%) Other Funding: \$279,000 - Federal (60%)

PIQUA-TROY ROAD RESURFACING PROJECT

This project consists of overlaying Piqua-Troy Road from the City of Troy corporation limits to the City of Piqua corporation limits.

Year: 2022 Total Cost: \$904,000 Local Share: \$180,800 (20%) Other Funding: \$723,200 - CEAO STP (80%)

TROY-URBANA ROAD RESURFACING PROJECT

This project consists of overlaying Troy-Urbana Road from the Deweese Road to the Champaign County Line.

Year: 2023 Total Cost: \$1,115,300 Local Share: \$238,000 (20%) Other Funding: \$952,000 - CEAO STP (80%)

BRIDGES

REPLACEMENT: CROFT MILL ROAD BRIDGE NO. 0.37

This project consists of replacing the existing steel beam bridge with a galvanized truss bridge.

Year: 2019 Total Cost: \$1,391,000 Local Share: \$69,550 (5%) Other Funding: \$1,321,450 - CEAO LBR (95%)

REPLACEMENT: TROY-URBANA ROAD BRIDGE NO. 4.71

This project consists of replacing the existing steel beam bridge with pre-stressed concrete beams.

Year: 2020 Total Cost: \$450,000 Local Share: \$150,000 (33%) Other Funding: \$300,000 - OWPC (67%) (If approved)

Drainage



DITCH NAME	No.	CONSTRUCTION COST BASIS	2017 ACTUAL ANNUAL COLLECTION	TYPICAL ANNUAL EXPENSES
** BEARD	807	\$10,876.54	\$1,310.71	\$1,700.00
** COTTINGHAM	806	\$10,815.11	\$3,265.01	\$3,650.00
DYE MILL	805	\$22,460.67	\$6,501.61	\$6,900.00
** FRESHOUR	841	\$11,916.49	\$1,191.70	\$2,400.00
** FROSTY-LANDIS	826	\$34,082.69	\$2,742.45	\$2,900.00
HARTSTEIN-SWEITZER	829	\$25,373.50	\$1,260.64	\$830.00
HARWOOD	818	\$207,656.20	\$2,141.87	\$3,000.00
HELMICK HARLACHER	833	\$37,225.00	\$1,861.29	\$3,800.00
LANE-HATHAWAY	842	\$18,901.11	\$2,273.96	\$2,200.00
** LEONARD	811	\$49,627.41	\$19,985.71	\$22,000.00
LUTHERAN ROAD GP.		MONT.	\$364.16	MONT.
MARSH	817	\$9,889.99	\$989.41	\$900.00
MOHLER JOINT	363	MONT.	\$2,687.94	MONT.
MUMFORD	846	\$68,543.11	\$1,600.40	\$600.00
PEMBERTON	843	\$18,708.50	\$1,096.96	\$1,450.00
REEDER	838	\$39,345.90	\$2,640.59	\$3,150.00
** REIGHARD	824	\$11,934.00	\$2,140.34	\$800.00
SHELBY COUNTY JT.		SHELBY	\$6,999.98	SHELBY
SWAILES RUN	844	\$52,500.00	\$110.33	\$500.00
TROY-CONCORD	821	\$318,908.52	\$21,790.44	\$32,000.00
UPPER LUDLOW	845	\$264,994.15	\$322.75	\$1,200.00
** WAUGER BRANCH	808	\$44,862.73	\$6,712.34	\$6,300.00
WELSCH	814	\$18,665.30	\$1,012.40	\$425.00

* = EVALUATE CURRENT COLLECTION
 ** = CONSTRUCTION BASE NEEDS RE-EVALUATED
 - LUTHERAN RD. GP. JOINT AND MOHLER JOINT = MONT. CO. MAINT.
 - SHELBY COUNTY JT. DITCHES = SHELBY COUNTY MAINTENANCE

CULVERTS

Our culvert replacement/upgrade program continued in 2017, 70 structures were replaced at a total cost of \$359,233. We prioritize the replacement of culverts on roads that are scheduled to be resurfaced to avoid having to cut into any new roadway in the foreseeable future. The largest culvert replacement was on Farrington Road, Culvert #2.960. Our county crews installed 56 lineal feet of an 8'x6' box culvert at a cost of \$49,008. Other major culvert projects during the summer included the replacement of the Loy Road Culvert #3.100, an 8'x4' box culvert 40' long costing \$23,632, the Old Staunton Road Culvert #0.521, a 6'x4' box culvert 48' long costing \$27,769, and the Troy-Sidney Road Culvert #3.807, a 29"x45" elliptical pipe 40' long with a total cost of \$10,950. In 2018 we anticipate replacing 50 to 60 culverts as part of our on-going culvert upgrade program.

DITCHES

Annual assessments are collected to finance on-going maintenance on 23 ditches in Miami County (see chart at left). These assessments are collected from adjacent landowners who benefit from the drainage improvement. State law limits ditch fund maintenance reserves to a set percentage of the construction cost of the ditch. Seven ditches (double asterisk) are in need of review of their approved construction base because the annual collection does not provide sufficient funding to maintain the completed project. In many cases this approved construction base is decades old and no adjustments for inflation have ever been made. Many of these same ditches are also in need of work which goes beyond the scope of routine maintenance (i.e. mowing and spraying), and funds for these items cannot be collected until the construction base is raised to allow for additional collection of funds. In 2017, the construction base for the Harwood Ditch No. 818 was reviewed and revised. Review of the construction base for the Cottingham and Wauger ditches is planned for 2018.

Routine ditch maintenance includes mowing and weed-spraying, but occasionally a drainage-way may require a cleanout or more extensive repair to restore drainage efficiency. In 2016 the Cottingham, Dye Mill, Frosty Landis, Troy-Concord, Swailes Run, and several other ditches required such repairs. In 2018 we anticipate that 10 of the 23 ditches listed at the left may require some sort of maintenance exceeding the norm, including ditch crossing replacement, tree and brush removal, open ditch cleanout, and tile main and/or spur repair/replacement.

The Japanese Honeysuckle plant is continually encroaching upon the ditch maintenance areas. In 2017 this invasive species required additional maintenance on the Dye Mill, Swailes Run, and Troy-Concord ditches. Mechanical removal and follow-up chemical treatments are utilized in an effort to control this plant.

Roads

The Highway Department is responsible for maintaining 423.531 miles of highways in serviceable condition using limited funding resources. We accomplish this through an aggressive preventive maintenance program designed to prolong the life of our highway pavement to the greatest extent possible. The two primary ways to extend pavement life are through the use of Dura Patching, which applies a mixture of bitumen and gravel to repair fractured/damaged roadway, and crack-sealing, where hot bitumen is applied exclusively to pavement cracks. In 2017, our maintenance program included 15 miles of Dura-Patching, 22 miles of crack-sealing, and numerous berm repairs as needed.



The 2017 paving program resulted in 24.554 miles of county highways being paved with asphalt by the John R. Jurgensen Company at a cost of \$1,642,670. Roads resurfaced in the 2017 paving program included portions of Casstown-Clark, Experiment Farm, Farrington, Jay, Klinger, two sections of Loy, Monroe-Concord, Old Staunton, Springcreek-Stringtown, Troy-Frederick, and Troy-Urbana. As a cost-savings measure, townships are invited to bid out their resurfacing needs in conjunction with the County Engineer's Office. As a result, 5.888 miles were paved with asphalt at a cost of \$519,968. Our 2017 Chip Seal Program included three townships totaling 4.974 miles at a cost of \$96,084.

As recited on page 1, we had one special paving project resulting in an additional 4.850 road miles being paved in 2017. Of the \$1,187,891 total cost to pave County Road 25A (a multi-lane thoroughfare) from the City of Troy corporation limits to the City of Piqua corporation limits, \$234,397 was the local share; the remaining \$953,494 was State and Federal funds.

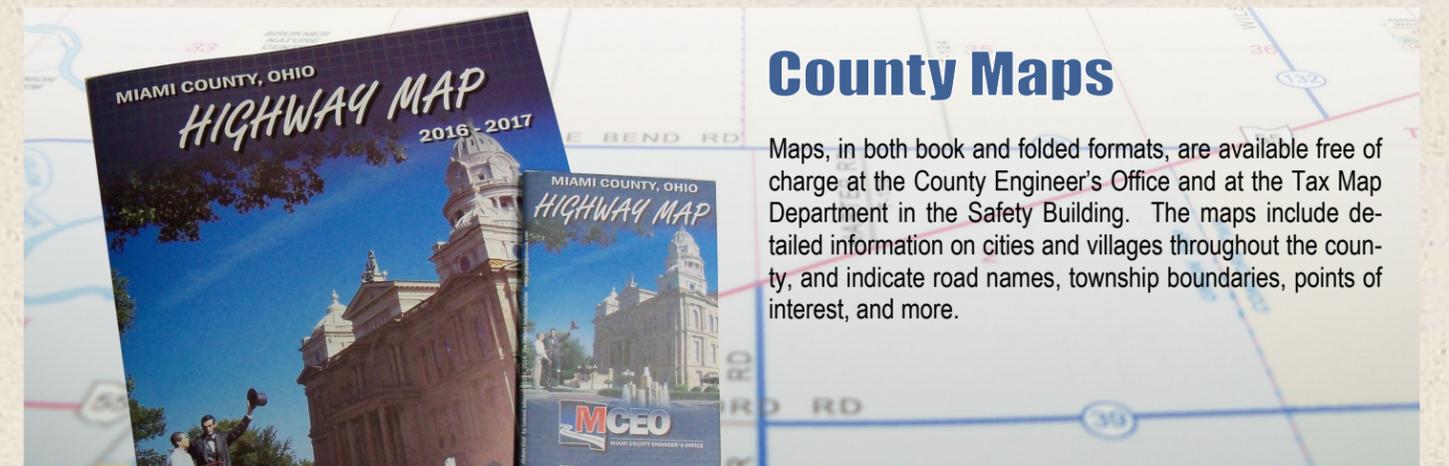
Road Construction & Maintenance Costs Totaled \$6,464,893 in 2017

In 2018, a berm stabilization will be completed for Troy-Sidney Road from Statler Road and extend north to a point 850 feet south of U.S. 36 which is also the location where the widening terminated from the U.S. 36 and Troy-Sidney signalization project. This section of roadway will be trench widened by removing the outside 1 foot of the existing roadway on both lanes and adding approximately four feet of pavement on each side of the pavement to provide a finished pavement width of 26 feet. This paved berm will eliminate the safety issue of drop-offs along the roadway.

The pavement widening will also consist of improving the turning radius at the northwest corner of the Troy-Sidney and Statler Road intersection. The entire length of the project will then receive a 2 inch overlay of ODOT Item 441 (448) Type 1. The finished pavement will receive an Item 617 aggregate berm of approximately one foot wide on each side along with new pavement markings.

SNOW AND ICE REMOVAL

Miami County continues to seek the best price for our rock salt purchases by participating in the cooperative group of Southwest Ohio Purchasers for Government (SWOP4G). We secured a contract for 5,000+/- tons of rock salt at a cost of \$50.44 per ton dumped for the 2017-2018 winter season. While we did experience "milder" winters in both 2015-2016 and 2016-2017; this winter season brought multiple snow events that covered the time period of December 9, 2017 through February 7, 2018. Expenses for snow removal this season totaled \$250,427.03 which includes the cost of labor, material and equipment. The effects of the harsh winter continue to be realized as the temperatures slowly climb out from the sub-freezing numbers. Our area streets, roadways, and interstates are showing signs of distress that comes from the several freeze/thaw cycles we experienced this past winter.



County Maps

Maps, in both book and folded formats, are available free of charge at the County Engineer's Office and at the Tax Map Department in the Safety Building. The maps include detailed information on cities and villages throughout the county, and indicate road names, township boundaries, points of interest, and more.

Bridges

With 343 bridges of various ages and conditions distributed throughout the county, our crews are never at a loss for work. The 2017 Bridge Program was highlighted by two larger projects. The first of these projects, completed by our county crews, was the replacement of the Shiloh Road Bridge No. 3.51. This steel beam superstructure was replaced with seven 80' prestressed concrete box beams. These beams were competitively bid and awarded to Prestress Services Industries of Columbus, Ohio in the amount of \$161,000.00. The project was partially funded by a grant from the Ohio Public Works Commission. The total cost for this replacement was \$288,383 of which \$127,383 was funded by the Miami County Bridge Levy .

The second of the two larger projects completed by our county crews in 2017 was the replacement of the Loy Road Bridge No. 0.58. The bridge was replaced with 24' x 30' concrete beams built by our county crews at a cost of \$66,836.

In addition to the two larger projects, our county crews also replaced Casstown-Clark Road Bridge No. 2.06 with 14' x 30' concrete beams fabricated by our county crews at a total project cost of \$49,600.

Overall, in 2017 we were able to remove the Shiloh Road Bridge No. 3.51 from our list of reduced-load posted structures, leaving 13 posted bridges in our inventory. In 2018, we plan to replace an additional three reduced-load posted bridges.

2018 will be another busy year for our bridge program with the following four bridges scheduled for replacement:

- ⇒ Walnut Street Bridge No. 0.00 in Fletcher, an existing concrete slab bridge, will be replaced with a precast four-sided box culvert. The estimated cost for this project is \$150,000.
- ⇒ Mill Road Bridge No. 0.30, an existing steel beam bridge, will be replaced with prestressed concrete box beams. The estimated cost for this project is \$150,000
- ⇒ Greenville Falls-Clayton Road Bridge No. 2.03, an existing steel beam bridge, will be replaced with prestressed concrete box beams. This project will be contracted this summer with an estimated cost of \$275,000.
- ⇒ Sodom Ballou-South Bridge No. 0.47, an existing steel beam bridge, will be replaced with County manufactured concrete beams. The estimated cost for this project is \$96,600.

In addition to the structures listed above, we will also be replacing several larger culverts in preparation with upcoming resurfacing projects.



Loy Road Bridge No. – 0.58



Shiloh Road Bridge No. 3.51 Replacement



Stanton Road Culvert Replacement

Signs

SIGN PROGRAM

In August of 2017, our office began using a new sign program software developed by Mastermind. This new software provides immediate web-based access to precise location information, orientation, and sign parameters, allowing sign shop personnel to employ the latest technology in tracking, placing, and maintaining the county's signs.



In order to make the public more aware of the County's posted bridges, every advance warning sign near and at a posted bridge has been replaced and updated to comply with the new Ohio Department of Transportation sign standards. These new signs will display the gross weight in tons and the number of axles for each vehicle that will be permitted to use the bridge.

In addition to the above-mentioned upgrades, our sign department replaced approximately 784 signs in 2017. Of these 784 signs, roughly 115 were replaced due to traffic accidents, 45 due to vandalism, and 21 due to weather related incidents. The remainder of the 784 signs were replaced due to continual maintenance and upgrades to our sign inventory.

TRAFFIC COUNTS/SPEED LIMIT STUDIES

We conduct 48-hour traffic counts at approximately 130 locations each summer on county and township roads. The traffic count data is used to establish priorities for roadway repair, repaving, lane-width alterations, signage requirements, and other highway-related improvements. Speed studies are occasionally conducted to determine appropriate speed limits based upon roadway improvements, alterations, or specific requests from township personnel. In 2017, speed studies were conducted on Singer Road, Bellefontaine Road, and Piqua Lockington Road.

CURVE STUDY

In 2016, a Curve study was performed by LJB, Inc. to determine what updates this office could make to the existing horizontal curve signs that would improve safety for the motorists on the roadways. Their recommendations included lowering the advisory speed on some horizontal curves and decreasing the distance between the horizontal curve and the advance warning signs. Finishing up in early 2017, the Sign Department replaced and/or added 125 horizontal alignment signs on county roads and 101 horizontal alignment signs on township roads.



Tax Map

The Tax Map Department draws and maintains tax maps for over 51,000 parcels of land in Miami County. A tax map shows the shape, size and owner of each parcel of land, and is used by the County Auditor to determine property taxes used to support local school districts. All tax maps, land/lot survey records, and record plats, a total of over 27,000 documents currently, are individually scanned so that digital copies are available by request via e-mail. Currently, all tax maps are available on Miami County's website. As always, however, if personal assistance is desired Tax Map personnel stand ready to serve the public's needs in accessing and navigating property documents and surveys from their office on the first floor of the Miami County Safety Building.

In addition to tax map work, multiple County departments call on the Map Department for a special mapping project from time to time. The Map Department Technicians created Precinct Maps at the request of Miami County Board of Elections. Ninety-two maps were prepared with updated information, performed in a timely manner, and were able to be used in the November election. Also, in 2017, the department reviewed the content and mathematical accuracy of over 120 land surveys of individual properties filed for record with the County Engineer. The department also reviewed and checked the mathematical accuracy of 47 Recorder's Plats, which consist primarily of residential and commercial subdivisions, street and alley vacations, annexations, and right-of-way plans of road projects. Finally, the department reviewed the deeded legal description of every property transferred in Miami County where over 4500 deeds/affidavits were recorded, each one containing one or more legal descriptions requiring review by the department.

